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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,512	02/12/2004	Young-Joon Ko	0630-1964P	3672

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EXAMINER

SUMMONS, BARBARA

ART UNIT PAPER NUMBER

2817

DATE MAILED: 05/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/776,512

Applicant(s)

KO ET AL.

Examiner

Barbara Summons

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2004 (pre-amendment).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-20 is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/19/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities:

In claim 1, on the last line thereof, note that "linear groove" should be changed to the plural - - linear grooves - - (see line 4). Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1 and 4-10 are rejected under 35 U.S.C. § 102(b) as being anticipated by Fu et al. "A Novel PBG Coplanar Waveguide" (cited by Applicants).

Fig. 1 of Fu et al. discloses a transmission line having a photonic band gap (PBG) coplanar waveguide (CPW) structure comprising: a ground conductive layer being the darkly shaded areas in the figure (see the paragraph under the figure) formed on a substrate; linear grooves of width G formed on the ground conductive layer; a signal line of width W formed between the linear grooves; rectangular grooves with dimension a formed close to the signal line and formed on the ground conductive layer; and slots with dimensions W_s and d_s (note that height d_s corresponds to Applicants' width W_s shown in Fig. 3) formed at the rectangular grooves respectively, and connecting the rectangular grooves and the linear grooves.

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Regarding claims 4-10, these are simply inherent features of the CPW transmission line with the rectangular grooves as can be seen from figures 2-5 and the discussion thereof. For example, the characteristic impedance of the transmission line inherently increases and is varied as the distance/period between the slots d and the width of each slot ds decreases (see claims 6 and 4), and the maximum reflection coefficient of an input terminal inherently occurs at the characteristic impedance of the line (claim 5), etc. Additionally, regarding claim 9, Fu et al. explicitly discloses that the distance between slots d and the dimensions of the slot including its width ds are determined by FDTD simulation based on the characteristic impedance value (96.7 ohms) of the transmission line (see the paragraph under Fig. 1).

4. Claims 1-12 are rejected under 35 U.S.C. § 102(a) as being anticipated by Ko et al. "Fully Integrated Unequal Wilkinson Power Divider With EBG CPW" (cited by Applicants).

Figs. 2(b) - 6 of Ko et al. discloses the PBG CPW transmission line and power divider of the invention (see Figs. 3 - 8 of the application and note common inventors). Because there is a different inventive entity (see inventor Jong-Uk Bu), the rejection is proper at this time.

Allowable Subject Matter

5. Claims 13-20 are allowable over the prior art of record.

6. The following is a statement of reasons for the indication of allowable subject matter:

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The prior art of record does not disclose or fairly suggest a power divider or method for fabricating a power divider comprising each of the specifically recited features, and especially having the "resistance layer" and "seed layer" and first and second conductive layers formed in the locations recited (see claim 13, lines 2-6 and claim 17, lines 3-7).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ishikawa U.S. 5,652,557 discloses a known CPW transmission line and a method of fabricating such a transmission line (see Figs. 1 and 2).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara Summons whose telephone number is (571) 272-1771. The examiner can normally be reached on M-Th, M-Fr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bob Pascal can be reached on (571) 271-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

bs
May 25, 2005



**BARBARA SUMMONS
PRIMARY EXAMINER**